

## REMARKS

Claims 1, 3-11, 13-18, 20-22, and 35-46, 48-58, and 60-70 were previously presented. Claims 2, 12, 19, 23-34, 47, and 59 are cancelled. Accordingly, claims 1, 3-11, 13-18, 20-22, and 35-46, 48-58, and 60-70 are pending in the application.

### 2. Rejection of Independent Claims 1, 18, 37, 53, 60 and 62 under 35USC§102

Independent Claims 1 and 60 each stand rejected under 35USC§102 or 35USC§103 as being unpatentable over U.S. Patent Number 5,586,209 (Matsuura).

Claims 1 and 60 each recites “**multi-mode** waveguides” and “the waveguides intersecting one another.” As a result, in order for Matsura to properly support the rejection, Matsuura must teach **multi-mode** waveguides that intersect one another.

### First argument that the cited art does not teach every element of the claims.

The Office Action cites Figure 6 as teaching the waveguides intersecting one another. “FIG. 6 ... consists of 7 connected optical branching devices BR1, BR2, BR3, BR4, BR5, BR6 and BR7 of the type shown in FIG. 4” (C4, L36 and C16, L3) As a result, Matsura teaches that the structure of the branching devices illustrated in Figure 6 can be discerned from Figure 4. Since the branching devices shown in Figure 4 do not have intersecting waveguides, the branching devices in Figure 6 also do not have intersecting waveguides. As a result, Figure 6 does not teaching waveguides that intersect one another as recited in the claims.

### Second argument that the cited art does not teach every element of the claims

The rejection is based on the argument that the waveguide tapers of Figure 4 (and thus 6) expanding out to a multimode waveguide. Even if the Applicant were to concede this, Matsura still fails to teach the claim limitation. For instance, Matsura teaches that the waveguides 20 and 21 are both single mode waveguides. As a result, using the Examiner’s interpretation of the taper, Figure 4 (and thus 6) teaches the Examiner’s multimode waveguide coupled with two single mode waveguides. However, the claims require the intersection of multimode waveguides. Since coupling of a multimode waveguide with two single mode waveguides would

still fail to teach intersection of multimode waveguides, Matsura does not teach every limitation of the above claims.

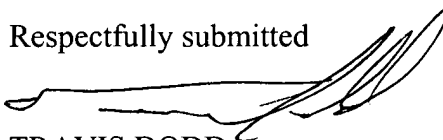
6. Claims 3-11, 13-17, 20-22, and 35-36, 38-46, 48-52, 54-58, 61, and 63-70

Each of claims 3-11, 13-17, 20-22, and 35-36, 38-46, 48-52, 54-58, 61, and 63-70 depends from Independent Claim 1, 18, 37, 52, 60, or 62. Since the Independent Claims are believed to be in condition for allowance, claim 3-11, 13-17, 20-22, and 35-36, 38-46, 48-52, 54-58, 61, and 63-70 are also believed to be in condition for allowance.

## CONCLUSION

In light of the Claim amendments presented above, Applicants believe they are entitled to a letters patent. The Examiner is encouraged to telephone the undersigned with any questions.

Respectfully submitted



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